

## **BAB V**

### **KESIMPULAN DAN SARAN**

#### **5.1 Kesimpulan**

Setelah melakukan penelitian sintesa katalis asam heterogen menggunakan asam TsOH dan MSA dengan konsentrasi berbeda dan dengan dua metode hidrotermal berbeda, diperoleh beberapa kesimpulan dari penelitian ini, yaitu:

1. Semakin tinggi konsentrasi MSA dan TsOH yang digunakan, nilai *acid site density* dan perolehan metil oleat dari reaksi esterifikasi asam oleat dan metanol juga meningkat.
2. Nilai *acid site density* untuk TsOH lebih besar dibandingkan dengan MSA, namun perolehan metil oleat dari reaksi esterifikasi asam oleat dan metanol untuk TsOH lebih rendah pada metode hidrotermal dua tahap (lebih tinggi pada metode hidrotermal satu tahap).

#### **5.2 Saran**

Adapun beberapa saran yang dapat diberikan untuk penelitian selanjutnya, yaitu:

1. Melakukan variasi waktu pencucian dan jumlah pengeringan yang dilakukan untuk katalis menggunakan MSA dengan metode hidrotermal satu tahap.
2. Melakukan variasi waktu sulfonasi untuk hidrotermal dua tahap menggunakan MSA dan TsOH.

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